UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,118	07/09/2003	Vernon R. Brethour	ALER1560	2196

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EXAMINER
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ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

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	Application No.	Applicant(s)
Office Action Summary	10/616,118	BRETHOUR ET AL.
	Examiner	Art Unit
	SOPHIA VLAHOS	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,18,25-28 and 44-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,18,25-28 and 44-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1.   Amended claims 1, 18, 28 and new claims 44, 46, 48, 52 (received on 1/31/2007) incorporating limitations not rejected under 35 U.S.C 102 in the previous Office Action are rejected under 35 U.S.C 102(e) using newly discovered reference(s) to Pendergrass et. al. (U.S. 6,937,639).

     Apparatus claims 28, 48, 52 are rejected under 35 U.S.C §101.

Claim Objections

2.   Claims 18, 27, 28, 56 are objected to because of the following informalities:

Claim 18, line 1 (after the preamble) recites: "...all of said communication **codes**..." should be "...all of said communication **sequences**..." since the preamble mentions "communication signal sequences". Lines 8-9 of claim 18, recite: "...<u>within said family of rules</u>, and such that at least one of said chips..." it is recommended to revise the above as follows: " "...<u>within said family of rules</u>, and **arraying said chips** such that at least one of said chips..." for clarity since the latter part of the phrase refers to arraying the chips and is not related to the rulers.

Lines 12-13 mention "...said family of patterns..." (twice) that should be "said family of **binary** patterns..."

Claim 27, mentions: "...said family of patterns..." that should be "said family of

binary patterns..." (as it depends on claim 18).

Claims 28, and 48 line 3 (after the preamble) both mention: "said transmitter and

said receiver..." should be "...said **radio** transmitter and said **radio** receiver..."

to agree with the "radio transmitter" and "radio receiver" mentioned in lines 1 and

2 of the corresponding claim.

Claim 56 (depending on claim 52) recites: " wherein said positive value and said

negative value correspond to an amplitude of an impulse" but this limitation is

already present (lines 6-7 after the preamble of claim 52) in claim 52, making

claim 56 redundant.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or
> composition of matter, or any new and useful improvement thereof, may obtain a patent
> therefor, subject to the conditions and requirements of this title.

Claim 28, 48, 52 are rejected under 35 U.S.C. §101 because the claimed

invention lacks patentable utility.

Apparatus claims 28, 48, 52 are directed to a § 101 Judicial Exception –

(Abstract Idea – signal generation using codes that have specific properties

(orthogonality etc)).   However the claimed invention does not produce a useful,

tangible, and concrete result.

To overcome the 35 §U.S.C rejection it is recommended to amend claims

28, 48, and 52 (similarly to the amended method claims (claim 1 for example)

that incorporate the limitations of "using the arrayed chips..." and "transmitting

the generated signal...").

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1, 18, 25-28, 44-56 are rejected under 35 U.S.C. 102(e) as being

anticipated by Pendergrass et. al. (U.S. 6,937,639).

The applied reference has a common assignee with the instant

application. Based upon the earlier effective U.S. filing date of the reference, it

constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C.

102(e) might be overcome either by a showing under 37 CFR 1.132 that any

invention disclosed but not claimed in the reference was derived from the

inventor of this application and is thus not the invention "by another," or by an

appropriate showing under 37 CFR 1.131.

With respect to claim 1, Pendergrass et. al. disclose: selecting a code

length (see Fig. 6C where code length of code 1 "612" on Figure [0, 2, 1, 4, 4, 1,

2] specifies number of boxes that have discrete values, see column 22, lines 35-

39 and column 23, lines 1-2), said code length comprising a plurality of chips,

wherein each chip of said plurality of chips is one of a nonzero value and a zero

value (see Fig. 6C, where every frame 614 has slots (chips) that are occupied

(non-zero) or empty (zero)), wherein said non-zero value is one of a positive

value and a negative value (see column 16, lines 50-67, column 17, lines 1-4

where non-temporal characteristics can also be specified (amplitude, polarity (i.e.

positive / negative pulses)) see Fig. 5A, where positive and negative pulses are

shown) where and wherein said positive value and said negative value

correspond to an amplitude of an impulse and wherein said chips are arrayed

such that no two of said non-zero values are adjacent (see example of Fig. 6C

where occupied slots are non-adjacent) arraying said plurality of chips such that

there is a plurality of said zero values within said plurality of chips and one or

more said non-zero values is arrayed in accordance with a ruler (Fig. 6C,

placement of boxes with pulses, specified by code "612" see column 22, lines 4-

11, 35-37, for example the quadratic congruential code), wherein said ruler is

substantially orthogonal to time-shifted versions of said ruler (where the quadratic

congruential code has good auto-correlation properties i.e. the code is

substantially orthogonal to time shifted version of said code); using the arrayed

chips to generate a signal (see Fig. 8 or Fig. 9 "code source" (whose operation is

combined with blocks 820, 808, 822) see column 24, lines 34-37); and

transmitting the generated signal (see Fig. 8, antenna 824 transmits the

generated signal).

With respect to claim 18, Pendergrass et. al disclose: defining said set

such that all of said communications signal codes in said set have a code length

(see Fig. 6C where code length of code 1 "612" on Figure [0, 2, 1, 4, 4, 1, 2]

specifies number of boxes that have discrete values, see column 22, lines 35-39

and column 23, lines 1-2), said code length comprising a plurality of chips, each

of said chips having a value, said value being one of a positive value, a negative

value and a zero value (see Fig. 6C, where every frame 614 has slots (chips)

that are occupied (non-zero) or empty (zero), see column 16, lines 50-67, column

17, lines 1-4 where non-temporal characteristics can also be specified

(amplitude, polarity (i.e. positive / negative pulses)) , wherein said positive value

and said negative value correspond to an initial direction of an impulse (where

the initial direction of an impulse is a non-temporal characteristic, that can be

specified, see column 16, lines 50-67); arraying said chips such that at least one

said positive value and at least one said negative value is placed in accordance

with a ruler(Fig. 6C, placement of boxes with pulses, specified by code "612"

(the ruler) see column 22, lines 4-11, 35-37, for example the quadratic

congruential code), said ruler being substantially orthogonal to all time-shifted

versions of said ruler and belonging to a family of rulers wherein each ruler within

said family is substantially orthogonal to each other ruler within said family of

rulers(see the quadratic congruential code has good auto-correlation properties
(i.e. the code is substantially orthogonal to time shifted version of said code) and
good cross-correlation properties (i.e. the family of quadratic congruential codes
are substantially orthogonal to each other ruler within said family of rulers), and
such that at least one of said chips has a zero value (the un-occupied slots of
each frame 614); arraying said chips such that said at least one positive value
and said at least one negative value are placed in accordance with a pattern (see
Fig. 6C, code 2, "620" specifying discrete values, see column 22, lines 4-11 and
40-42, see pseudo-random codes (for example PN codes include Gold, Kasami
orthogonal codes) said pattern being from a family of binary patterns wherein
each pattern within said family of patterns is substantially orthogonal to
substantially all time-shifted versions of each other pattern within said family of
patterns (PN codes such as Kasami codes have good autocorrelation
characteristics); arraying said chips such that no two of said non-zero values are
adjacent (see Fig. 6C, arrangement of occupied boxes specified by code 1);
using the arrayed chips to generate a signal (Fig. 8 or Fig. 9 "code source"
(whose operation is combined with blocks 820, 808, 822) column 24, lines 34-
37); and transmitting the generated signal (Fig. 8, antenna 824 transmits the
generated signal).

With respect to claim 25, Pendergrass et. al disclose: wherein said code
length is 30 chips (see column 23, lines 1-2, where N is specified to be a positive
integer).

With respect to claim 26, Pendergrass et. al disclose: wherein said family of rulers comprises a first ruler and a second ruler wherein said first ruler and said second ruler comprise four non-zero value chips (code 1 612 shown in Fig. 6C, is quadratic congruential code(s) (family of codes) and with respect to the number of non-zero value chips , this depends on the length of the selected code 1, 612 that specifies the occupied slots (chips) as shown in Fig. 6C).

With respect to claim 27, Pendergrass et. al disclose: wherein said family of patterns is comprised of four patterns (depends on PN code sets, Kasami code set);

With respect to apparatus claim 28, claim 28 is rejected based on a rationale similar to the one used to reject method claim 1 above.

With respect to claim 44-45, claims 44-45 are rejected based on a rationale similar to the one used to reject method claim 18 above.

With respect to claim 46, Pendergrass et. al disclose: selecting a code length, said code length comprising a plurality of chips (see Fig. 6C where code length of code 1 "612" on Figure [0, 2, 1, 4, 4, 1, 2] specifies number of boxes that have discrete values, see column 22, lines 35-39 and column 23, lines 1-2), wherein each chip of said plurality of chips is one of a nonzero value and a zero

value, wherein said non-zero value is one of a positive value and a negative

value; arraying said plurality of chips wherein (see Fig. 6C, where every frame

614 has slots (chips) that are occupied (non-zero) or empty (zero), see column

16, lines 50-67, column 17, lines 1-4 where non-temporal characteristics can also

be specified (amplitude, polarity (i.e. positive / negative pulses)): there is a

plurality of said zero values within said plurality of chips and one or more said

non-zero values is arrayed in accordance with a ruler, wherein said ruler belongs

to a family of rulers wherein any ruler within said family of rulers is substantially

orthogonal to all time-shifted versions of any other ruler within said family of

rulers (Fig. 6C, placement of boxes with pulses, specified by code "612" (the

ruler) see column 22, lines 4-11, 35-37, for example the quadratic congruential

code (family of codes) that have good cross-correlation properties); at least one

said positive value and at least one said negative value are in accordance with a

pattern (see Fig. 6C, code 2, "620" pattern specifying discrete values, see

column 22, lines 4-11 and 40-42, see pseudo-random codes (for example PN

codes include Gold, Kasami orthogonal codes), wherein said pattern is selected

from a family of patterns and wherein said family of patterns is such that any

pattern within said family of patterns is substantially orthogonal to substantially all

time-shifted versions of any other pattern within said family of patterns (the above

refers to code cross-correlation property and PN codes such as Kasami codes

have good cross correlation properties); and no two of said non-zero values are

adjacent (see arrangement of occupied boxes in Fig. 6C); using the arrayed

chips to generate a signal (Fig. 8 or Fig. 9 "code source" (whose operation is

combined with blocks 820, 808, 822) column 24, lines 34-37); and transmitting the generated signal (Fig. 8, antenna 824 transmits the generated signal).

With respect to claim 47, Pendergrass et. al disclose: wherein said positive value and said negative value correspond to an amplitude of an impulse (see column 16, lines 63-67).

With respect to claims 48-51 claims 48-51 are rejected based on a rationale similar to the one used to reject claim 18 above.

With respect to claims 52-56 these claims are rejected based on a rationale similar to the one used to reject claim 46-47 above (for claims 52-55 see claim 46 and for claim 56 see claim 47 above.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOPHIA VLAHOS whose telephone number is 571 272 5507. The examiner can normally be reached on MTWRF 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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3/21/2007

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